CONTENTS

NUMBER 1

PIETRO MAJER: Two variational methods on manifolds with boundary 1

D. J. BENSON and JAY A. WOOD: Integral invariants and cohomology of B Spin (n) 13

M. J. HOPKINS and J. R. HUNTON: On the structure of spaces representing a Landweber exact cohomology theory 29

P. B. KRONHEIMER and T. S. MROWKA: Gauge theory for embedded surfaces, II ... 37

CRAIG R. GUILBAULT: Some compact contractible manifolds containing disjoint spines 99

M. BESTVINA and M. HANDEL: Train-tracks for surface homeomorphisms 109

MICHAEL FALK: $K(\pi, 1)$ arrangements 141

LÊ. HÔNG VÂN and KAORU ONO: Symplectic fixed points, the Calabi invariant and Novikov homology 155

TAKAO MATUMOTO: Lusternik–Schnirelmann category and knot complement II 177

CHUN-NIP LEE: Homotopy inverse limits of Thom spectra 185

GEORGIOS D. DASKALOPOULOS and KAREN K. UHLENBECK: An application of transversality to the topology of the moduli space of stable bundles 203

NORMAN LEVITT: Spaces of arcs and configuration spaces of manifolds 217

GARRETT STUCK: A topological analogue of the Borel density theorem 231

NUMBER 2

ANDRÁS NÉMETHI: The equivariant signature of hypersurface singularities and eta-invariant 243

KATSUMI SHIMOMURA and ATSUKO YABE: The homotopy groups $\pi_*(L_2 S^0)$ 261

LISA C. JEFFREY and FRANCES C. KIRWAN: Localization for nonabelian group actions 291

RUTH M. CHARNEY and MICHAEL W. DAVIS: Strict hyperbolization 329

RICHARD SHARP: Periodic points and rotation vectors for torus diffeomorphisms.. 351

E. DROR FARJOUN and J. H. SMITH: Homotopy localization nearly preserves fibrations 359

OCTAVIAN CORNEA: Strong LS category equals cone-length 377

SHIGEAKI MIYOSHI: Links and globally completely integrable vector fields on an open 3-manifold 383

ALEJANDRO ADEM and R. JAMES MILGRAM: The cohomology of the Mathieu group M_{22} 389

WEN-HSIUNG LIN: The Whitehead squares $[\iota_{2^i-1}, \iota_{2^i-1}] \in \pi_{2^{i+1}-3}(S^{2^i-1})$ are projective 411

DROR BAR-NATAN: On the Vassiliev knot invariants 423

LEI FENGCHUN: A proof of Przytycki's conjecture on n-relator 3-manifolds 473

ALEXANDER REZNIKOV: The volume and the injectivity radius of a hyperbolic manifold 477

NORIHIKO MINAMI: The Kervaire invariant one element and the double transfer... 481

NUMBER 3

JOHN R. PARKER: Kleinian circle packings 489

R. PIERGALLINI: Four-manifolds as 4-fold branched covers of S^4 497

ICHIRO SHIMADA: Fundamental groups of open algebraic varieties 509

KAREN VOGTMANN: End invariants of the group of outer automorphisms of a free group 533

MARTIN R. BRIDSON: Optimal isoperimetric inequalities for abelian-by-free groups 547

C. B. HUGHES, L. R. TAYLOR and E. B. WILLIAMS: Rigidity of fibrations over nonpositively curved manifolds 565

MARSHALL M. COHEN and MARTIN LUSTIG: Very small group actions on **R**-trees and Dehn twist automorphisms 575

ANDREW RANICKI: Finite domination and Novikov rings 619

JOHN MARTINO and STEWART PRIDDY: Stable homotopy classification of $BG_{\hat{p}}$ 633

R. BENEDETTI and R. SILHOL: Spin and Pin^- structures, immersed and embedded surfaces and a result of Segre on real cubic surfaces 651

CARLOS GUTIERREZ: Knots and minimal flows on 3-manifolds 679

MAX KAROUBI: Formes differentielles non commutatives et operations de Steenrod 699

LOUIS ZULLI: A matrix for computing the Jones polynomial of a knot 717

GUNNAR CARLSSON and ERIK KJÆR PEDERSEN: Controlled algebra and the Novikov conjectures for K- and L-theory 731

NUMBER 4

BARRY JESSUP: Holonomy-nilpotent fibrations and rational Lusternik–Schnirelmann category 759

JUSTIN ROBERTS: Skein theory and Turaev–Viro invariants 771

LEE MOSHER: Geometry of cubulated 3-manifolds 789

TAKASHI TSUBOI: Small commutators of piecewise linear homeomorphisms of the real line 815

DAVID ANICK and BRAYTON GRAY: Small H spaces related to Moore spaces 859

C. BLANCHET, N. HABEGGER, G. MASBAUM and P. VOGEL: Topological quantum field theories derived from the Kauffman bracket 883

J. D. S. JONES and B. W. WESTBURY: Algebraic K-theory, homology spheres, and the η-invariant 929

MANOS G. LYDAKIS: Fixed point problems, equivariant stable homotopy, and a trace map for the algebraic K-theory of a point 959

Volume 34 (1995) Title Page, Contents and Author Index I